University of Arkansas - Fort Smith
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General Syllabus

DMSO 44303 Vascular Sonography II

Credit Hours: 3 Lecture Hours: 2 Laboratory Hours: 2

Prerequisite: DMSO 32203 Vascular Sonography I

Corequisites: DMSO 44003 Pathophysiology and Special Applications, DMSO 44103 Abdominal Sonography II, and DMSO 44304 Clinical Practice II

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Advanced study of vascular sonography including the effects of medication on vascular diagnostic findings, clinical signs and symptoms, related diagnostic procedures, and typical/atypical findings of vascular disease. Study will include the quantitative principles applied to vascular testing. Technical information to include performance of physiological testing, real-time ultrasound imaging and Doppler evaluation as it relates to vasculature.

B. Additional Information = None

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Discuss appropriate indications for vascular examination
2. List differential diagnosis as it relates to vascular testing and examinations
3. Describe the value of other clinical vascular diagnostic procedures including vascular surgery, intravascular ultrasound, angioscopy, transluminal angioplasty, endarterectomy, vein and synthetic vascular bypass procedures and endovascular repair.
4. Demonstrate knowledge of other vascular procedures emphasizing indications, utility, and limitations of angiography, venography, magnetic resonance angiogram, computed tomography and nuclear medicine vascular procedures.

5. Discuss importance and impact of other laboratory values and invasive and non-invasive testing/imaging modalities.
6. List potential effects of medications on vascular diagnostic findings.
7. Demonstrate knowledge, understanding and proficiency in the use of quantitative principles applies to vascular testing including:
   a. Acute and chronic thrombus
   b. Doppler waveform characteristics associated with various pathologies
   c. Aorta/renal ratios
   d. Resistive index/pulsatility index

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills

Critical Thinking Skills: Students will identify the effects of medication on vascular diagnostic findings, clinical signs and symptoms, related diagnostic procedures and typical/atypical findings of vascular disease.

Quantitative Reasoning: Students will study and apply quantitative principles to vascular testing to determine disease progression.

Communication Skills (written and oral)

Students will effectively communicate imaging findings verbally and in written form.

Ethical Decision Making

Students will abide by the standard code of ethics and personal/moral value system. Students will review case studies and contribute solutions to problems in an ethical manner.

Global and Cultural Perspectives

Students will understand different cultures and exhibit professionalism and respect for others and their backgrounds.

III. Major Course Topics

A. Vascular Physiology, Pathophysiology, and Hemodynamics
B. Vasoactive Relationships
C. Effects of Medication on Vascular Findings
D. Ankle/Brachial Pressure Ratios
E. Segmental Pressures
F. Resistive Index
G. Pulsatility Index
H. Area and Diameter Reduction Measurements
I. Normal an Abnormal Vascular Flow Patterns and Waveform Morphology